


ARTICLE

The Lottery Paradox, the No-Justification Account, and Taiwan

Kok Yong Lee 

Department of Philosophy, National Chung Cheng University
Email: kokyonglee.mu@gmail.com

(Received 26 January 2021; revised 22 March 2022; accepted 4 April 2022;
first published online 10 May 2022)

Abstract

To resolve the lottery paradox, the “no-justification account” proposes that one is not justified in believing that one’s lottery ticket is a loser. The no-justification account commits to what I call “the Harman-style skepticism”. In reply, proponents of the no-justification account typically downplay the Harman-style skepticism. In this paper, I argue that the no-justification reply to the Harman-style skepticism is untenable. Moreover, I argue that the no-justification account is epistemically ad hoc. My arguments are based on a rather surprising finding that the no-justification account implies that people living in Taiwan typically suffer from the Harman-style skepticism.

Keywords: Lottery paradox; the no-justification account; justification; knowledge; Taiwan

1. The Lottery Paradox and the No-Justification Account

Suppose that I own a ticket of a fair lottery with 1,000,000 tickets and only one winning ticket. The lottery has been drawn, and I know nothing about the result. Intuitively, I am justified in believing that my ticket, say, Ticket 1, is a loser. Yet since my reasons for believing that Ticket 1 is a loser are qualitatively identical to my reasons for believing of any other ticket that it is a loser, by parity of reasoning, I am justified in believing that Ticket n is a loser (where $2 \leq n \leq 1,000,000$). Now, if I am justified in believing that Ticket 1 is a loser and that Ticket n is a loser (where $2 \leq n \leq 1,000,000$), I am justified in believing that all tickets are losers. But suppose that I am also justified in believing that not all tickets are losers. So, I am justified in believing that all and not all tickets are losers. This, presumably, is unacceptable.

This problem is generally known as the *lottery paradox*.¹ A closer examination shows that the lottery paradox presupposes the following principles:

¹The lottery paradox comes in a variety of versions. A prominent version is about rational acceptance (cf. Kyburg 1961; Nelkin 2000; Douven 2002), but it is also common to formulate the paradox in terms of knowledge (cf. Cohen 1998; Nelkin 2000; Williamson 2000; Hawthorne 2004). The justification version of the lottery paradox is widely discussed in the literature, too (cf. Sutton 2007; Kelp 2014; Smith 2016). The following discussions can be easily applied to the knowledge-version lottery paradox.

- (Closure) If S is justified in believing that p_1 , S is justified in believing that p_2 , ..., and S is justified in believing that p_k , and if the conjunction of p_1, p_2, \dots , and p_k implies q , then S is justified in believing that q .
- (Parity) If S is justified in believing that Ticket 1 is a loser, then S is justified in believing that Ticket n is a loser (where $2 \leq n \leq 1,000,000$).

With these at hand, we can formulate the lottery paradox into a precise argument:

- P1 S is justified in believing that Ticket 1 is a loser. (Assumption)
- P2 S is justified in believing that Ticket n is a loser (where $2 \leq n \leq 1,000,000$). (P1, Parity)
- P3 The conjunction of <Ticket 1 is a loser>² and <Ticket n is a loser> (where $2 \leq n \leq 1,000,000$) implies <All tickets are losers>. (Assumption)
- P4 S is justified in believing that all tickets are losers. (P1–P3, Closure)
- P5 S is justified in believing that not all tickets are losers. (Assumption)
- P6 The conjunction of <All tickets are losers> and <Not all tickets are losers> implies <All and not all tickets are losers>. (Assumption)
- C1 Therefore, S is justified in believing that all and not all tickets are losers. (P4–P6, Closure)

This is a valid argument with an unacceptable conclusion. But both the premises and the epistemic principles involved are individually plausible. P1 and P5 are based on the stipulation of the current case. P3 and P6 are conceptually true. (Parity) appears to capture S's epistemic position with respect to <Ticket m is a loser> (where $1 \leq m \leq 1,000,000$), since S's epistemic position with respect to <Ticket 1 is a loser>, by stipulation, is qualitatively identical to S's epistemic position with respect to <Ticket n is a loser> (where $2 \leq n \leq 1,000,000$) (also cf. Hawthorne 2004, 16).

While epistemic closure principles such as (Closure) appear to be initially plausible, they have also been heatedly debated.³ Moreover, it is widely agreed that (Closure) needs to be further modified in order to cope with a variety of problems. For instance, it has been suggested that (Closure) requires not only that the conjunction of p_1, p_2, \dots , and p_k imply q but also that S competently deduces q from the conjunction of p_1, p_2, \dots , and p_k (cf. Williamson 2000; Hawthorne 2004). In this paper, I will grant that the lottery paradox is not to be resolved by rejecting (Closure), for the target of this paper is P1. More exactly, I will focus on the strategy for resolving the lottery paradox by contending that we lack justification for (and so knowledge of) propositions such as <Ticket m is a loser> (where $1 \leq m \leq 1,000,000$). I will call this "the no-justification account".⁴

²Throughout this paper, I will use '<p>' to indicate the proposition that p .

³Epistemic closure principles, in one form or another, are widely accepted (cf. Stine 1976; Vogel 1990; Feldman 1995; Williamson 2000; Hawthorne 2004). But there are noticeable opponents of closure principles, too (cf. Dretske 1971; Nozick 1981; Heller 1999; also see footnote 4).

⁴Proponents of the no-justification account are abundant (cf. Bonjour 1985; Ryan 1991; Williamson 2000; Nelkin 2000; Pritchard 2005; Sutton 2007; Smith 2016). Also, it has been argued that proponents of the knowledge-first account of justification should also endorse the no-justification account (cf. Douven 2008; Kelp 2014, 2015). Other strategies have been explored, too. For instance, some have urged to give up (Parity) (cf. Harman 1986), while others have proposed to deny (Closure) (cf. Kyburg 1961; Kroedel 2012; Timmerman 2013). Some epistemic contextualists have argued that in no context are all

The no-justification account concedes to what I will call “the Harman-style skepticism” (section 2). Proponents of the no-justification account have typically responded by downplaying the Harman-style skepticism (section 3). In what follows, I argue that the no-justification account’s concession to the Harman-style skepticism comes at a surprising price, an implication that people living in Taiwan typically lack justification for (or knowledge of) various ordinary propositions (section 4).⁵ I then argue that this implication not only undermines the standard no-justification reply to the Harman-style skepticism (section 4), but it also reveals that the no-justification account is epistemically ad hoc (section 5).

2. The problem of the Harman-style skepticism

Harman (1986) has famously pointed out a potential problem of the no-justification account:

Suppose Bill wants to know where Mary will be tomorrow. Bill knows that Mary intends to be in New York. Bill also knows that if Mary’s ticket is the winning ticket, she will instead be in Trenton for the award ceremony. But there is only one chance in a million of that. Can’t Bill conclude that Mary will be in New York tomorrow and in that way come to know where Mary will be tomorrow? That seems possible. But doesn’t it involve knowing her lottery ticket is not going to be a winning ticket? (Harman 1986: 71)

Harman’s case is so specified such that Bill knows that Mary will be in New York tomorrow only if her lottery ticket is a loser. Now, by the no-justification account, Bill does not know that Mary’s lottery ticket is a loser. It follows that, by epistemic closure, Bill does not know that Mary will be in New York tomorrow. This is a skeptical result since we ordinarily take ourselves to know propositions such as <Mary will be in New York tomorrow>. Harman’s case is about knowledge, but it can be modified to address justification, as the reason why Bill does not know that Mary’s lottery ticket is a loser is not that other conditions of knowledge such as belief, truth, etc. are not satisfied but rather that Bill’s justification for <Mary’s lottery ticket is a loser> fails to reach the knowledge-level.

We may reconstruct the justification version of the problem pointed out by Harman as follows:

- P7 Bill is not justified in believing that Mary’s lottery ticket is a loser. (The No-Justification Account)
- P8 Bill is justified in believing the conditional that Mary will be in New York tomorrow only if her lottery ticket is a loser. (Assumption)
- C2 Therefore, Bill is not justified in believing that Mary will be in New York tomorrow. (P7 & P8, Closure)

the premises of, and the epistemic principles involved in, the lottery paradox true altogether (cf. Lewis 1996; Cohen 1998).

⁵A number of philosophers have also argued against the no-justification account (cf. Foley 1979; Klein 2003; Engel 2020). I will contribute to the debate by introducing a new case and examining several less recognized, if not novel, morals.

Let us make three comments. First, while the argument from P7 to P8 is about the justification of a future proposition (i.e., <Mary will be in New York tomorrow>), it is not hard to see that similar arguments are applicable to propositions about the present and/or the past (cf. Hawthorne 2004: 3–4). For instance, the present case can be specified such that if Mary's lottery ticket is a winner, then she has enough money to buy a new car (or equivalently, if Mary does not have enough money to buy a new car, then her lottery ticket is a loser) and that Bill is justified in believing so. Hence, by replacing <Mary will be in New York tomorrow> in P7-C2 with <Mary does not have enough money to buy a new car>, we can deduce that Bill is not justified in believing that Mary does not have enough money to buy a new car.

Second, C2, by itself, is an undesirable skeptical result, for it is intuitively plausible that Bill is justified in believing that Mary will be in New York tomorrow. In fact, the skeptical threat can be generalized. Let us distinguish between *ordinary propositions* and *lottery propositions*: the former are about ordinary matters analogous to <Mary will be in New York tomorrow>, which we ordinarily take ourselves to be justified in believing (or know), while the latter are about the winning or losing of lottery tickets analogous to <Ticket 1 is a loser>, which are taken to be very likely (but not certainly) to be true. Now, insofar as an ordinary proposition *p* entails a lottery proposition *q* and *S* is justified in believing the entailment, arguments such as P7-C2 indicate that the no-justification account gives rise to a skeptical result that *S* lacks justification for (and so knowledge of) *p*; this is so despite the fact that it is initially plausible that *S* is justified in believing that *p*. Call it 'the Harman-style skepticism'.

Third, the argument from P7 to C2 is valid, and more importantly, proponents of the no-justification account have to accept both premises. P7 simply represents the core idea of the no-justification account, and P8 is based on the stipulation of the case in play. In other words, proponents of the no-justification account have to endorse or at any rate concede to the Harman-style skepticism.

Conceding to the Harman-style skepticism is problematic on two scores. First, skepticism is *prima facie* theoretically implausible. Second, and perhaps less recognized, conceding to the Harman-style skepticism gives rise to an *ad hoc* epistemic theory. I will address the first problem in the next two sections and will come back to the second problem in section 5.

3. The standard no-justification reply to the Harman-style skepticism

Skepticism is widely considered to be an implausible epistemic theory. Pollock and Cruz (1999: 7) once wrote, "skeptical argument is best viewed as a *reductio ad absurdum* of its premises, rather than as a proof of its conclusion". So, other things being equal, it seems that we should reject the epistemic theory delivering the verdict that we are not justified in believing (or do not know) things that we ordinarily take ourselves to be justified in believing (or know).

In reply, proponents of the no-justification account have typically argued that the skeptical implications of their view are not as unpalatable as they initially appear. The strategy is to downplay the Harman-style skepticism by arguing that it rarely arises. For instance, when discussing a case analogous to Harman's case mentioned above, Smith (2016) wrote that:

In this case, according to my theory, I would indeed lack justification for believing that I'll be having lunch with my friend tomorrow – the most I would be justified

in believing is that I will *very likely* be having lunch with my friend tomorrow. But this, I suggest, is not a counterintuitive result – or at least, not obviously so. ... Even if one dislikes the mildly skeptical predictions that my account offers in these cases, it would appear that such results are, at least, relatively quarantined. It is unusual for a belief to entail, given one's evidence, a proposition that literally concerns the outcome of a lottery. The preceding cases needed to be tailored to quite an extent in order to ensure this. (Smith 2016: 55–56; original italics)

A proponent of the no-justification account, Smith concedes to the Harman-style skepticism; he takes himself to lack justification for (and so knowledge of) the belief that he will be having lunch with his friend tomorrow, a belief analogous to Bill's belief that Mary will be in New York tomorrow. But according to Smith, conceding to the Harman-style skepticism “is not a counterintuitive result – or at least, not obviously so”, and the skepticism in play is “relatively quarantined”. To get to these points, Smith wrote:

Believing that someone won't win a lottery *when I have no reason to think that she even holds a ticket in a lottery* is a very different prospect from believing that someone won't win a lottery when I know that she holds a ticket in a lottery and have further information to the effect that the lottery is fair, etc. ... My theory of justification predicts that no belief of the latter sort could be justified—but it makes no definitive predictions about beliefs of the former sort. ... We could, of course, alter the case so that I am aware of a fair lottery to be drawn tomorrow and aware that my friend holds one or more tickets in this lottery. If my *evidence were expanded to include these propositions* then, quite clearly, [I would no longer be justified in believing] the proposition that I'll be having lunch with my friend tomorrow. (Smith 2016, 55; my italics)

The idea is that whether or not S1 is justified in believing that S2 does not win a lottery depends on whether or not S1 possesses reasons or evidence indicating that S2 holds a lottery ticket, the lottery is fair, etc. On Smith's view, having such relevant evidence will render propositions such as P7 true: if Smith has the relevant evidence, he will not be justified in believing that his friend does not win a lottery. But if Smith does not have such evidence, then there are no “definitive predictions” – propositions such as P7 may be true or false (i.e., Smith may or may not be justified in believing that his friend does not win a lottery).⁶

It follows that, on Smith's view, arguments such as P7-C2, which give rise to the Harman-style skepticism, are guaranteed to be sound *only* in situations in which S1 possesses relevant evidence indicating that S2 is a lottery-ticket holder, etc.; such arguments may be unsound when such evidence is not in the possession of S1. In other words, the Harman-style skepticism is guaranteed to arise only in situations in which

⁶I think Smith would want to say the same to propositions such as P8; Smith would agree that having relevant evidence will render propositions such as P8 true. That is, if Smith possesses evidence indicating that his friend is a lottery-ticket holder, etc., then Smith is justified in believing the conditional that he will be having lunch with his friend tomorrow only if his friend does not win a lottery. Otherwise, it is hard to understand why Smith says in the first quotation above that “[i]t is unusual for a belief to entail, given one's evidence, a proposition that literally concerns the outcome of a lottery”. For simplicity's sake, I will leave this point aside.

S1 has relevant evidence indicating that S2 is a lottery-ticket holder, etc.; the skeptical result may not arise when S1 does not possess such evidence.

Now, a case can be made that it is unusual for us to have relevant evidence indicating that a certain person is a lottery-ticket holder, etc. If so, perhaps it can be further claimed that it is unusual for arguments such as P7-C2 to be sound, or equivalently, unusual for the Harman-style skepticism to arise.⁷ But if the Harman-style skepticism rarely arises, it seems unproblematic to take conclusions such as C2 to be just “the mildly skeptical predictions” of the no-justification account or to take the Harman-style skepticism to be “relatively quarantined”.

A similar view can be found in Nelkin (2000). Also a proponent of the no-justification account, Nelkin thinks that “the best way to respond to [Harman’s] case is to deny that Bill can know that Mary will be in New York” (Nelkin 2000: 407). Like Smith, Nelkin also downplays the Harman-style skepticism by appealing to its rarity:

[I]t is important to note that we are not in Bill’s situation very often. This means that it remains open that we often know where people will be (and not just where they are likely to be). Thus, although it might seem at first that denying that Bill knows that Mary will be in New York forces us to give up a number of intuitions, reflection shows that this is not the case. (Nelkin 2000: 407–8)

Now, this may all seem very plausible. After all, how often do we find ourselves having evidence indicating that a certain person is (currently) a lottery-ticket holder, etc.? Probably not very often – but then, according to the train of thought in play, it is not often that the Harman-style skepticism arises. So, it seems fair to say that conceding to the Harman-style skepticism does not force us to give up “a number of intuitions”. Put differently, an ordinary case might need “to be tailored to quite an extent” to be turned into a situation in which the Harman-style skepticism prevails – but this just shows how uncommon (and so insignificant) the Harman-style skepticism is.

We can sum up the standard no-justification reply as follows: conceding to the Harman-style skepticism is not totally unacceptable, since it is unusual for the skepticism to arise, the reason, in turn, being that it is unusual for one to possess relevant evidence indicating that a certain person is a lottery-ticket holder, etc. Does the standard reply work? I do not think so. To see this, we need to look no farther than an island located in East Asia, i.e., Taiwan.

4. The Government-Uniform-Invoices system in Taiwan

In Taiwan, most businesses selling goods and services must issue a Government Uniform Invoice (GUI) to the buyer at the time of purchase. An interesting fact about GUIs is that they are really lottery tickets. Each GUI has an 8-digit number (Figure 1), which basically functions as the lottery-ticket number of a state lottery managed by the Ministry of Finance of Taiwan. On the 25th of every odd-numbered month, a lottery will be drawn, and five distinct 8-digit numbers will be announced as the winning numbers. The highest prize (the “Special Prize”) is worth 10 million TWD (roughly US\$342,000). Moreover, GUIs whose numbers match the final 7, 6, 5, 4, and 3 digits of the “First Prize” will receive a small prize valued at 40,000 TWD

⁷For argument’s sake, I will grant this inference.



Figure 1. Two formats of GUIs.

(roughly US\$1,300), 10,000 TWD (roughly US\$313), 4,000 TWD (roughly US\$136), 1,000 TWD (roughly US\$31), and 200 TWD (roughly US\$7), respectively.⁸

⁸The numbers listed above are based on the Wikipedia entry “Uniform Invoice Lottery” (February 18, 2020). Retrieved from https://en.wikipedia.org/wiki/Uniform_Invoice_lottery. For more details, visit the website of the Ministry of Finance of Taiwan (<https://www.etax.nat.gov.tw/etwmain?site=en&isWeb=N>).

The GUI system has given rise to a unique, “lottery-laden” lifestyle in Taiwan. People typically keep their invoices for months (since the lottery is drawn every two months). It is not uncommon to hear the state-run lottery brought up in daily conversation and the news.⁹ When handing the customers their GUIs, salespeople sometimes greet them by wishing them good luck with the lottery. Some people take pains with making a large number of small purchases (sometimes illegally) just to collect GUIs.¹⁰

The donation box is one of the best illustrations of how pervasive GUIs qua lottery tickets are in the lives of people living in Taiwan (hereafter ‘the Taiwanese’). Charity organizations are well aware of the monetary value of GUIs,¹¹ which leads to donation boxes for GUIs being set up in all sorts of locations of purchase, e.g., in front of a drive-through window (Figure 2), at the checkout counter of a pharmacy store (Figure 3), and even next to an automatic parking ticket machine (Figure 4) – such practices are so common that donation boxes for cash sometimes explicitly state that they are not for GUIs (Figure 5)!

How the Taiwanese go about living their ordinary lives is a troubling phenomenon for the no-justification account. More precisely, it reveals that (a) the standard no-justification reply to the Harman-style skepticism is untenable and that (b) the no-justification account’s concession to the Harman-style skepticism gives rise to an ad hoc theory of justification (knowledge). The remainder of this section will be devoted to (a). I will come back to (b) in the next section.

To begin with, notice that the Taiwanese are typically lottery-ticket holders, and they are well aware of the facts that others are lottery-ticket holders, that the lottery is fair, and so on. Hence, it is safe to say that the Taiwanese typically have the relevant evidence indicating that others are lottery-ticket holders, etc., too. This reveals a surprising implication of the no-justification account: by conceding to the Harman-style skepticism, the no-justification account implies that the Harman-style skepticism prevails in Taiwan, or equivalently, the Taiwanese typically suffer from the Harman-style skepticism.

This implication poses a serious problem for the standard no-justification reply to the Harman-style skepticism. Recall that the standard reply is to downplay the Harman-style skepticism by claiming that it is uncommon for such skepticism to arise. However, notice that in general, it is not uncommon for members of a group G to have H, if a significant minority of G have the property H. For instance, it is not uncommon for older people to lack the capacity of taking care of themselves given that a significant minority of older people lack such a capacity. Now, arguably, the Taiwanese constitute a significant minority of ordinary people. So, given that the Taiwanese typically face the Harman-style skepticism, it is not uncommon for ordinary people to be threatened by the Harman-style skepticism. Hence, the standard no-justification reply to the Harman-style skepticism does not hold.

Admittedly, that the Taiwanese typically suffer from the Harman-style skepticism does *not* imply that it is common for ordinary people to suffer from the Harman-style skepticism. In fact, it still seems fair to say that it is not common for ordinary

⁹When the lottery is recently drawn, the detailed information about the winning tickets (invoices) will be in the news (cf. <https://www.cna.com.tw/news/firstnews/202002055007.aspx>).

¹⁰According to one report, a convenience-store owner was caught making a large number of small purchases in his own store and had then won lottery prizes worth 8,400 TWD (roughly US\$280) within six months. The action was considered illegal by the Taiwanese government, and the owner was requested to return all the lottery prizes (cf. <https://gotv.ctity.com.tw/2016/10/288770.htm>).

¹¹According to one measure, the expected value of a GUI is roughly 1.429 TWD (cf. <https://wealth.businessweekly.com.tw/GArticle.aspx?id=ARTL003000484>).



Figure 2. A donation box for cash and GUIs in front of a drive-through window.

people to have relevant evidence indicating that others are lottery-ticket holders, etc. But then it is also fair to say that it is not common for ordinary people to suffer from the Harman-style skepticism. So, might proponents of the no-justification account discard the strong contention that it is *uncommon* for the Harman-style skepticism to arise and opt for the weak contention that it is *not common* for the Harman-style skepticism to arise?

Retreating to the weak position is not very helpful for the purposes of defending the no-justification account against the problem of the Harman-style skepticism, for now proponents of the no-justification account would be in no position to simply claim that conceding to the Harman-style skepticism does not force us to give up many of our ordinary epistemic intuitions. For there is no guarantee that skepticism that does not commonly arise would not force us to give up “a number of intuitions” regarding justification (or knowledge). Likewise, even though the Harman-style skepticism does not commonly arise, it might arise often enough for preventing us from counting the skepticism as being “relatively quarantined”.

Perhaps there are other ways to downplay the Harman-style skepticism. When commenting on Bill’s lack of knowledge in Harman’s case mentioned above, Nelkin notes that while Bill does not know that Mary will be in New York tomorrow, he does know that she will “very likely” be in New York tomorrow. Nelkin then notes that “there are no obvious consequences for Bill that hinge on whether he knows that Mary will be in New York or only knows it extremely likely” (Nelkin 2000: 407). The idea seems to be that depriving Bill of knowledge of (justification for) <Mary will be in New York tomorrow> will have few practical impacts on Bill’s daily life, so long as Bill knows



Figure 3. A donation box for GUIs at the counter of a pharmacy store.

that Mary will very likely be in New York tomorrow. For instance, Bill can still plan to meet with Mary in New York tomorrow. So, could we say that imposing the Harman-style skepticism on the Taiwanese is not totally unacceptable, since the skeptical result is not debilitating?

This response presupposes, incorrectly, that the severity of imposing the Harman-style skepticism on the Taiwanese depends on its practical impacts. But we



Figure 4. A donation box for GUIs attached to an automatic parking ticket machine.

are facing a *theoretical* problem, not a practical one. René Descartes has noted that his epistemic project is not concerned with “action but merely the acquisition of knowledge” (Descartes 1984: 2:15). I should say the same here. The problem facing the no-justification account is not that the view has implications that, for all practical purposes, greatly affect the ordinary lives of the Taiwanese. The problem, rather, is that imposing the Harman-style skepticism on the Taiwanese is theoretically implausible (I will say more about this point in the next section).

Another way to respond is to argue that the idea that the Taiwanese typically suffer from the Harman-style skepticism, seemingly implausible as it is, is still relatively moderate in the following sense. Roughly 24 million people are living in Taiwan. While 24 million are surely a lot of people, the number pales in comparison with the world population, which is roughly 7.6 billion (the population in Taiwan is roughly equivalent to 0.3% of the world population). So, the skeptical threat in play might still be counted as relatively moderate in that it affects only a (significant) minority of people. So, perhaps imposing the Harman-style skepticism on the Taiwanese is not utterly unacceptable – to the rest of the world anyway!

This response presupposes that it is (always? Often? Somehow?) acceptable to deprive a group of people of justified beliefs (knowledge) provided that the group constitutes only a minority of the world population. But the presupposition is too strong, for the population in any country still constitutes a minority of the world population. For instance, the three most populated countries in the world, i.e., China, India, and the United States, are just equivalent to 18.5%, 17.7%, and 4.2% of the world population respectively. By the same logic, one would have to conclude that, for any country *N*



Figure 5. A donation box for cash at the counter of a convenience store noting “Not for GUIs”.

in the world, imposing a certain full-fledged skepticism on the population in N would still be counted as relatively moderate. But presumably, this conclusion is implausible.

Finally, instead of focusing on the population impacted by the Harman-style skepticism, proponents of the no-justification account might focus on the number of propositions the justification for (or knowledge of) which is affected by the Harman-style skepticism. The Harman-style skepticism affects only a proper subset

of ordinary propositions, namely, propositions about events affected by the result of a lottery such as <Mary will be in New York tomorrow>. The Harman-style skepticism has virtually no impact on many ordinary propositions not so affected such as <New York is in the US>, <Biden is the President of the United States>, etc. In fact, it seems fair to say that even in situations in which the Harman-style skepticism prevails, we still know most of the things that we ordinarily take ourselves to know. So, perhaps one could argue that the Harman-style skepticism is “relatively quarantined” in the sense that it has no impact on most ordinary propositions that we take ourselves to know.

However, even granting that the Harman-style skepticism does not apply to most ordinary propositions, the threat of the Harman-style skepticism is hardly blunted. For the Harman-style skepticism still affects an enormous number of ordinary propositions – notice that there are presumably *infinitely many* propositions that are about events affected by the result of a lottery. For instance, it is not hard to imagine the situations in which the following propositions are subject to the Harman-style skepticism: <Mary will be in New York tomorrow>, <Mary will not have enough money to go on an Africa safari tomorrow>, <Mary does not have enough money to pay back all her mortgage>, <Mary does not have enough money to buy a new car>, etc. So, while the Harman-style skepticism does not affect most ordinary propositions, it is still fair to say that it affects infinitely many ordinary propositions. Being a minority does not mean being sparse. Most natural numbers are not prime. Still, there are presumably infinitely many prime numbers.

5. The problem of epistemic ad hocery

Not only does imposing the Harman-style skepticism on the Taiwanese undermine the standard no-justification reply to the Harman-style skepticism, but it also reveals a serious, if less emphasized, problem of the no-justification account, or at any rate, any epistemic account implying that we are not justified in believing (and thus do not know) ordinary propositions that entail a lottery proposition. The problem, in a nutshell, is that there is no sound epistemic basis whatsoever that justifies depriving the Taiwanese, *but not the rest of us*, of justification for (and so knowledge of) such ordinary propositions (in what follows, I will assume that no other countries have instituted the GUI system or something equivalent).

To see this, notice that the Taiwanese are ordinary people just like the rest of us; they are epistemically on a par with the Japanese, the English, Canadians, etc. The Taiwanese might have their own unique culture, history, and style of living, but as far as I can tell, their ways of acquiring and storing information, their ability to think critically and reason abstractly, their ability to conceive counterfactual or imaginary scenarios, etc. are not essentially different from ours. Moreover, it does not seem to be that the Taiwanese have a conception of knowledge drastically different from the one prevalent among mainstream philosophers – as far as I can tell, the Taiwanese’s judgments regarding many of the famous epistemological thought experiments such as the Gettier-style thought experiments (cf. Gettier 1963), the stakes-shifting cases (cf. Schaffer 2006; Lee 2020b), etc. are in line with the ones dominating the literature.

Put differently, suppose that Tsai-Hsia, a Taiwanese, has the habit of forming her beliefs about ordinary propositions on the basis of reliable belief-forming processes, while Ali, a Malaysian, has the habit of forming his beliefs about ordinary propositions on the basis of unreliable belief-forming processes. Now, to say that the Taiwanese, but

not the rest of the world, typically suffer from the Harman-style skepticism is tantamount to saying that the Taiwanese's epistemic positions with respect to ordinary propositions are in some way systematically worse than the rest of the world's epistemic positions with respect to such propositions. But is it not odd (if not absurd) to say that Tsai-Hsia's epistemic position with respect to ordinary propositions is in some way systematically worse than Ali's?

Hence, on the face of it at least, it is epistemically ad hoc to drive a wedge between the Taiwanese and the rest of the world. Doing so is as epistemically ad hoc as driving a wedge between, say, iOS-cellphone users and Android-cellphone users. So, insofar as the no-justification account implies that the Taiwanese, but not the rest of us, typically lack justifications for (and so knowledge of) various ordinary propositions, it is an epistemically ad hoc view that should give us pause for thought.

It is worth commenting on the problem that I am pressing here, as it has seldom been explicitly addressed in the literature (if at all). First, as a problem for the no-justification account, the Harman-style skepticism is typically regarded as a *skeptical* problem (we have seen, in the last section, the Harman-style skepticism is not relatively quarantined in the way that the proponents of the no-justification account claim it to be). The problem presented in this section, by contrast, focuses on the problem of imposing the Harman-style skepticism on *the Taiwanese (but not the rest of the world)*, the point being that there is no sound epistemic basis whatsoever that justifies depriving the Taiwanese, but not the rest of the world, of justification for (or knowledge of) various ordinary propositions. This is not so much a problem of skepticism as a problem of epistemic ad hocery. Second, epistemologists are no stranger to theoretical claims about the epistemic statuses of hypothetical agents in hypothetical scenarios, so perhaps it is worth noting that the problem of epistemic ad hocery in play is concerned with an *empirical* claim about the epistemic statuses of *real* people in the *actual* world.

Now, I suspect that an inclination to protest might have been mounting for some time. I have been arguing that there is no systematic difference in epistemic position between the Taiwanese and the rest of the world. Some might disagree. In what follows, I will consider and reject a powerful objection to my thesis. As we proceed, it will become clear that there is no sound epistemic basis for distinguishing the epistemic positions of the Taiwanese and the ones of the rest of us.

To be clear, I do not mean that there is no difference whatsoever between the Taiwanese and the rest of us. After all, there is an obvious difference between them: the Taiwanese live in a society with the GUI system, while the rest of the world do not. But it is worth pointing out that this fact *by itself* is not epistemically relevant or at any rate does not indicate that the Harman-style skepticism prevails in Taiwan – *in the absence of the no-justification account*, the GUI system does *not* give rise to the Harman-style skepticism; without the no-justification account, arguments such as P7-C2 will not get off the ground. It follows that proponents of the no-justification account cannot claim that the Taiwanese and the rest of the world are epistemically dis-analogous merely because the former, but not the latter, are living in a society with the GUI system, for this claim simply begs the questions.

Nevertheless, proponents of the no-justification have a powerful argument for the epistemic discrepancy between the Taiwanese and the rest of the world:

Consider an analogy. The government of country X has started to put up fake barns, cows, buildings, etc. (perhaps to make the world prettier). The result that we get is that the citizens of X have much less knowledge than the rest of the

world. Note that here we do not have a worrisome skeptical problem. The reason for this is that the government of X has created an environment in which Gettier cases¹² abound, and since there is no knowledge in Gettier cases, an environment in which knowledge is sparse. Note that we have a ‘sound epistemic basis’ for thinking that the citizens of X do not have knowledge, which will ultimately be explained by the correct solution to the Gettier problem, i.e., in terms of the condition on knowledge that handles Gettier cases.

Now, a case can be made that exactly the same holds, *mutatis mutandis*, for the Taiwanese. Just like the government of X created an environment in which Gettier cases abound, so the Taiwanese government has created an environment in which lottery cases abound. As a result, just like the government of X created an environment in which knowledge is sparse, so the Taiwanese government has created an environment in which justification is sparse. Note that, here too, we have a ‘sound epistemic basis’ for thinking that the Taiwanese do not have justification, which will ultimately be explained by the correct solution to the lottery paradox, i.e., in terms of the condition on justification that explains why we do not have justification for lottery propositions. Crucially, again, we are not looking at a worrisome skeptical problem, for we can perfectly understand why it happens in Taiwan and not elsewhere. In fact, the full no-justification account (that contains the correct analysis of why lottery propositions are not justified) will predict as much.¹³

The crux of this argument by analogy is that the GUI system in Taiwan is epistemically analogous to the numerous fakes in country X. Hence, just like the latter constitute a sound epistemic basis for thinking that the citizens of country X do not know the Gettierized propositions such as <There is a barn>, <There is a cow>, etc., the former constitutes a sound epistemic basis for thinking that the Taiwanese do not know ordinary propositions such as <Mary will be in Taipei tomorrow>, <Mary does not have enough money to buy a car>, etc. So, just like it is not epistemically ad hoc to take the citizens of country X, but not the rest of the world, to lack knowledge of the Gettierized propositions, it is also not epistemically ad hoc to drive a wedge between the Taiwanese’s epistemic positions with respect to ordinary propositions and the ones of the rest of the world. Likewise, just like depriving the citizens of country X of knowledge of the Gettierized propositions is not a worrisome skeptical problem, imposing the Harman-style skepticism on the Taiwanese is not a worrisome skeptical problem, too.

However, the argument does not hold, as we should resist taking the GUI system in Taiwan to be epistemically analogous to the fakes in country X. To see this, let us ask: “Why do the fakes have the effect of depriving people living in country X of knowledge of the Gettierized propositions?” Here is a very natural answer: “Because the fakes in country X have a significant impact on the truth-conducive dimension of one’s beliefs in the Gettierized propositions.” For instance, being in an environment teeming with fakes renders propositions such as <I am facing a barn>, <I am facing a cow>, etc.

¹²The fake-barns case (cf. Goldman 1976) is sometimes classified as a kind of Gettier case (cf. Goldman and McGrath 2015), but some philosophers have argued that such cases are different from the standard Gettier cases in that there is a difference in the epistemic risk involved in these two kinds of cases (cf. Pritchard *et al.* 2010). But this point has no impact on the present discussion, and for the sake of discussion, I will take cases such as the fake-barns case to be a kind of Gettier case.

¹³I want to thank an anonymous reviewer of this journal for this reply.

significantly less likely to be true – or more precisely, very likely to be false. Put differently, while perceiving a nearby barn (cow, horse, etc.) in daylight is *globally reliable* – in general, more true beliefs than false ones will be formed on the basis of this belief-forming process – the belief-forming process is not *locally reliable* when one is in an environment teeming with fakes – within such an environment, the belief-forming process is very likely to generate false beliefs rather than true ones (cf. Goldman 1986). Since truth-conducive considerations such as probability and reliability are essential to the justification condition of knowledge, which in turn is a crucial condition for turning one's true belief into knowledge, it is unsurprising that being in an environment teeming with fakes causes one to lack 'knowledge-level' justification for the Gettierized propositions, and so prevents one from knowing them.

By contrast, the GUI system has at best a minimal impact on the truth-conduciveness of the Taiwanese's beliefs in ordinary propositions. Consider, for instance, the probabilities (for one) of ordinary propositions such as <Mary will be in Taipei tomorrow>, etc. Unlike the fakes in country X, which clearly reduce the probabilities (for the citizens of country X) of propositions such as <There is a barn>, etc., the GUI system in Taiwan does not significantly reduce the probabilities (for the Taiwanese) of propositions such as <Mary will be in Taipei tomorrow>, etc. In fact, the GUI system's impact on the probabilities of such propositions is negligible. To illustrate, suppose that the lottery in play in the GUI system has 1,000,000 tickets and only one winner. Moreover, suppose that the probability (for one) of <Mary does not have enough money to buy a new car> being false *due to Mary winning the lottery* is $1/1,000,000$ – this means that, other things being equal, instituting the GUI system renders <Mary does not have enough money to buy a new car> $1/1,000,000$ more likely to be false (assuming that the GUI system does not affect the probability of <Mary does not have enough money to buy a new car> in a not-related-to-winning-the-lottery way). Now, suppose that, *without* the GUI system, the probability (for one) of <Mary does not have enough money to buy a new car> is k . Under the present supposition, the probability (for one) of <Mary does not have enough money to buy a new car> in a society *with* the GUI system is l (where $l = k + 1/1,000,000$). Clearly, the difference between k and l is minuscule, as $l - k = 1/1,000,000$. This shows that the GUI system has no significant impact on the truth-conducive dimension of one's beliefs in ordinary propositions such as <Mary does not have enough money to buy a new car>, etc. At any rate, the GUI system does not render one's beliefs in ordinary propositions very likely to be false. Nor does it render such propositions significantly less likely to be true. Put differently, the GUI system has almost no impact on both the global and local reliability of the belief-forming processes that give rise to one's beliefs in ordinary propositions such as <Mary does not have enough money to buy a new car>, etc. If a belief-forming process for ordinary propositions such as <Mary does not have enough money to buy a car>, etc. is globally (locally) reliable in a society without the GUI system, then *ceteris paribus*, the process is still globally (locally) reliable even if the GUI system is to be instituted in the society (assuming that the GUI system does not affect the reliability of the belief-forming process in a not-related-to-winning-the-lottery way).

Hence, the GUI system in Taiwan is epistemologically disanalogous to the fakes in country X. The above argument by analogy does not go through: even if being in an environment teeming with fakes deprives one of justification for (or knowledge of) the Gettierized propositions, it does not follow that being in a society with the GUI system likewise deprives one of justification for (or knowledge of) related ordinary

propositions. Otherwise put, cases such as the fake-barn case give us no reason for thinking that the Taiwanese are epistemically disanalogous to the rest of the world.¹⁴

In fact, by showing that the GUI system has only a negligible impact on the truth-conduciveness of one's beliefs in ordinary propositions, we have also made a very strong case that the Taiwanese and the rest of the world are *epistemically analogous*. It is uncontroversial that the justification condition of knowledge depends (at least in part) on truth-conducive factors. The traditional view (known as *intellectualism*¹⁵) has it that the justification condition depends *exclusively* on truth-conducive factors. But even a non-traditional view such as *pragmatic encroachment* does not deny that truth-conducive factors are essential for the determination of knowledge-level justification (but pragmatic encroachment rejects the idea that truth-conducive factors are the only epistemically relevant factors) (cf. Fantl and McGrath 2002, 2009). Now, given that the only prominent difference between the Taiwanese and the rest of the world is that the former but not the latter are living in a society with the GUI system and that the GUI system has no significant impact on the truth-conduciveness of one's beliefs in ordinary propositions, it is plausible to conclude that there is no sound epistemic basis for distinguishing the epistemic statuses of the Taiwanese from the ones of the rest of the world.

Admittedly, even granting that the GUI system has no significant impact on the truth-conducive dimension of the Taiwanese's beliefs in ordinary propositions, one could still insist that the Taiwanese and the rest of us are epistemically disanalogous. The key is to concede that the justification condition of knowledge is determined not only by truth-conducive factors but also by *pragmatic* (i.e., non-truth-conducive) factors such as stakes. Traditionally, pragmatic factors are widely regarded as playing no crucial epistemic role – whether or not one has justification for (or knowledge of) a proposition *p* does not depend on one's pragmatic factors regarding *p*. But for the past two decades, a growing number of philosophers have proposed that pragmatic factors such as stakes may also play a crucial role in the determination of justification (or knowledge) (cf. Fantl and McGrath 2002, 2009). So, perhaps proponents of the no-justification account could argue that the Taiwanese and the rest of the world are epistemically disanalogous since the GUI system functions as one of those pragmatic factors that are justification-depriving (or knowledge-depriving).

It is worth noting that non-traditional views such as pragmatic encroachment are very controversial (Lee 2020a). Hence, perhaps this line of defending the no-justification account is not very helpful given that it presupposes such a controversial view. But even granting that the justification condition of knowledge depends (in part) on pragmatic factors, this line of defense is still untenable, for the idea that the GUI system is epistemically significant qua pragmatic factor is not plausible. The reason is that there is a relevant difference between regarding pragmatic factors such as stakes

¹⁴An anonymous reviewer of this journal suggests that the knowledge-first account of justification might be used to show that the GUI system and the fakes are epistemically analogous. The idea is that although the fakes in country X (but not the GUI system) are not truth-conducive, the fakes and the GUI system are nonetheless epistemically analogous in that none of them are knowledge-conducive or that both are knowledge-depriving. This idea, however, lacks justification, as no reason has yet been given to the claim that the GUI system is knowledge-depriving or at any rate not knowledge-conducive. Worse, we will be able to see, by the end of this section, that there are good reasons to think that the Taiwanese and the rest of the world are epistemically analogous.

¹⁵The term 'intellectualism' is from Stanley (2005) and is subsequently adopted by DeRose (2009). Fantl and McGrath call it 'purism about knowledge' (Fantl and McGrath 2009).

as justification-depriving (or knowledge-depriving) and regarding the GUI system as justification-depriving (or knowledge-depriving). To see this, notice that one prominent argument for the justification-depriving (or knowledge-depriving) power of pragmatic factors such as stakes has been our intuitions that, other things being equal, the presence of certain recognized pragmatic factors may deprive one of justification (or knowledge): for instance, a number of stakes-shifting cases seem to show that, other things being equal, one is less likely to attribute knowledge of *p* to oneself or others, when one recognizes that one has high stakes in *p*; by contrast, one's tendency to attribute knowledge of *p* will not be affected if one fails to recognize that one has high stakes in *p* (cf. Hawthorne 2004; Stanley 2005; also cf. Fantl and McGrath 2012 for a theoretical argument).

But the same cannot be said of the GUI system. We typically do not have the intuitions that living in a society with the GUI system deprives the Taiwanese of justification for (or knowledge of) many ordinary propositions. To give a piece of anecdotal evidence, over the years, I have come to know many foreigners who had made a long stay in Taiwan (long enough for them to learn that GUIs are lottery tickets), but not a single one of them had complained to me about their stay in Taiwan costing them their justification for (or knowledge of) various ordinary propositions. Likewise, when the GUI system was introduced on January 1, 1951, the Taiwanese were not terrified by the prospect of losing their justification for (or knowledge of) various ordinary propositions. And they still are not.

In brief, pragmatic factors such as stakes and the GUI system are epistemically dis-analogous. Even if pragmatic factors such as stakes have the power to deprive one of justification and/or knowledge (let us suppose), it does not follow that the GUI system also possesses such power.

We have assessed the epistemic significance of the GUI system qua truth-conducive factor and its epistemic significance qua pragmatic factor. If what has been said is correct, the GUI system has no significant impact on the truth-conduciveness of one's beliefs about ordinary propositions. Nor can it be regarded as a kind of pragmatic factor that deprives one of justification for (or knowledge of) ordinary propositions. Hence, not only do we lack a sound epistemic basis for thinking that the Taiwanese and the rest of the world are epistemically dis-analogous, but we actually have very good reasons for thinking that they are epistemically analogous. In other words, the no-justification is epistemically ad hoc insofar as it deprives the Taiwanese, but not the rest of the world, of justification for (and so knowledge of) certain ordinary propositions.

5. Conclusion

To resolve the lottery paradox, the no-justification account proposes that one is not justified in believing lottery propositions such as <Ticket 1 is a loser>. The no-justification account, however, gives rise to the Harman-style skepticism. In response, proponents of the no-justification account typically downplay the Harman-style skepticism.

Perhaps surprisingly, the no-justification account's concession to the Harman-style skepticism implies that the Taiwanese, but not the rest of the world, typically suffer from the Harman-style skepticism. This implication is problematic on two scores. First, if the Harman-style skepticism prevails in Taiwan, the standard no-justification reply to the Harman-style skepticism does not hold, for the skepticism is not "relatively quarantined" in the way proponents of the no-justification account claim it to be. Second, it is epistemically ad hoc to impose the Harman-style skepticism on the

Taiwanese (but not the rest of us), for the Taiwanese are epistemically analogous to the rest of us.

Before ending our discussion, let me note that there are independent arguments for the no-justification account (cf. Smith 2021). Because of the limitation of space, I have not engaged with these arguments. But as far as I can tell, the points established above are to a large extent independent of these arguments. While nothing I have said so far directly shows that these arguments do not work, the main arguments of this paper are not directly rejected by them either.¹⁶

References

- BonJour L.** (1985). *The Structure of Empirical Knowledge*. Cambridge, MA: Harvard University Press.
- Cohen S.** (1998). 'Contextualist Solutions to Epistemological Problems: Scepticism, Gettier, and the Lottery.' *Australasian Journal of Philosophy* 76(2), 289–306.
- DeRose K.** (2009). *The Case for Contextualism*. Oxford: Clarendon Press.
- Descartes R.** (1984). *The Philosophical Writings of Descartes*. Vol. 2. Translated by J. Cottingham, R. Stoothoff and D. Murdoch. Cambridge: Cambridge University Press.
- Douven I.** (2002). 'A New Solution to the Paradoxes of Rational Acceptability.' *British Journal for the Philosophy of Science* 53(3), 391–410.
- Douven I.** (2008). 'The Lottery Paradox and Our Epistemic Goal.' *Pacific Philosophical Quarterly* 89(2), 204–25.
- Dretske F.** (1971). 'Conclusive Reason.' In *Perception, Knowledge, and Belief*, pp. 3–29. New York, NY: Cambridge University Press.
- Engel M.** (2020). 'Lotteries, Knowledge, and Inconsistent Belief: Why You Know Your Ticket Will Lose.' *Synthese*. <https://doi.org/10.1007/s11229-020-02555-w>.
- Fantl J. and McGrath M.** (2002). 'Evidence, Pragmatics, and Justification.' *Philosophical Review* 111(1), 67–94.
- Fantl J. and McGrath M.** (2009). *Knowledge in an Uncertain World*. Oxford: Oxford University Press.
- Fantl J. and McGrath M.** (2012). 'Arguing for Shifty Epistemology.' In J. Brown and M. Gerken (eds), *Knowledge Ascriptions*, pp. 55–74. Oxford: Oxford University Press.
- Feldman R.** (1995). 'In Defence of Closure.' *Philosophical Quarterly* 45, 487–94.
- Foley R.** (1979). 'Justified Inconsistent Beliefs.' *American Philosophical Quarterly* 16(4), 247–57.
- Gettier E.** (1963). 'Is Justified True Belief Knowledge?' *Analysis* 23(6), 121–3.
- Goldman A.I.** (1976). 'Discrimination and Perceptual Knowledge.' *Journal of Philosophy* 73(20), 771–91.
- Goldman A.I.** (1986). *Epistemology and Cognition*. Cambridge, MA: Harvard University Press.
- Goldman A.I. and McGrath M.** (2015). *Epistemology: A Contemporary Introduction*. New York, NY: Oxford University Press.
- Harman G.** (1986). *Change in View*. Cambridge, MA: MIT Press.
- Hawthorne J.** (2004). *Knowledge and Lotteries*. Oxford: Clarendon Press.
- Heller M.** (1999). 'Relevant Alternatives and Closure.' *Australasian Journal of Philosophy* 77(2), 196–208.
- Kelp C.** (2014). 'No Justification for Lottery Losers.' *Pacific Philosophical Quarterly* 95(2), 205–17.
- Kelp C.** (2015). 'Lotteries and Justification.' *Synthese* 194(4), 1233–44.
- Klein P.** (2003). 'How a Pyrrhonian Skeptic Might Respond to Academic Skepticism.' In E. Sosa, J. Kim, J. Fantl and M. McGrath (eds), *Epistemology: An Anthology*, 2nd edn, pp. 35–51. Malden, MA: Blackwell.
- Kroedel T.** (2012). 'The Lottery Paradox, Epistemic Justification, and Permissibility.' *Analysis* 72(11), 57–60.
- Kyburg H.** (1961). *Probability and the Logic of Rational Belief*. Middletown, CT: Wesleyan University Press.
- Lee K.Y.** (2020a). 'On Two Recent Arguments against Intellectualism.' *NCCU Philosophical Journal* 43, 35–68.
- Lee K.Y.** (2020b). 'Stakes-Shifting Cases Reconsidered – What Shifts? Epistemic Standards or Position?' *Logos & Episteme* 11(1), 53–76.
- Lewis D.** (1996). 'Elusive Knowledge.' *Australasian Journal of Philosophy* 74(4), 549–67.
- Nelkin D.K.** (2000). 'The Lottery Paradox, Knowledge, and Rationality.' *Philosophical Review* 109(3), 373–409.
- Nozick R.** (1981). *Philosophical Explanations*. Cambridge, MA: Harvard University Press.

¹⁶I want to thank an editor and an anonymous reviewer of this journal for comments that have greatly improved this paper.

- Pollock J.L. and Cruz J.** (1999). *Contemporary Theories of Knowledge*, 2nd edn. Lanham, MD: Rowman & Littlefield.
- Pritchard D.** (2005). *Epistemic Luck*. New York, NY: Clarendon Press.
- Pritchard D., Millar A. and Haddock A.** (2010). *The Nature and Value of Knowledge: Three Investigations*. Oxford: Oxford University Press.
- Ryan S.** (1991). 'The Preface Paradox.' *Philosophical Studies* **64**(3), 293–307.
- Schaffer J.** (2006). 'The Irrelevance of the Subject: Against Subject-Sensitive Invariantism.' *Philosophical Studies* **127**(1), 87–107.
- Smith M.** (2016). *Between Probability and Certainty: What Justifies Belief*. New York, NY: Oxford University Press.
- Smith M.** (2021). 'Four Arguments for Denying That Lottery Beliefs Are Justified.' In I. Douven (ed.), *Lotteries, Knowledge and Rational Belief: Essays on the Lottery Paradox*, pp. 95–109. New York, NY: Cambridge University Press.
- Stanley J.** (2005). *Knowledge and Practical Interests*. Oxford: Clarendon Press.
- Stine G.** (1976). 'Skepticism, Relevant Alternatives, and Deductive Closure.' *Philosophical Studies* **29**(4), 249–61.
- Sutton J.** (2007). *Without Justification*. Cambridge, MA: MIT Press.
- Timmerman T.** (2013). 'The Persistent Problem of the Lottery Paradox: And its Unwelcome Consequences for Contextualism.' *Logos & Episteme* **4**(1), 85–100.
- Vogel J.** (1990). 'Are There Counterexamples to the Closure Principle?' In E. Sosa, J. Kim, J. Fantl and M. McGrath (eds), *Epistemology: An Anthology*, 2nd edn, pp. 290–301. Malden, MA: Blackwell.
- Williamson T.** (2000). *Knowledge and Its Limits*. Oxford: Clarendon Press.

Kok Yong Lee is a Professor at National Chung Cheng University. He works primarily in epistemology, philosophy of language, philosophy of science, and metaethics.